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10/519,541	12/28/2004	Tokifumi Majima	MAJIMA1	2562

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EXAMINER

SINGH, SATYENDRA K

ART UNIT	PAPER NUMBER
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1657

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/519,541	Applicant(s) MAJIMA ET AL.	
	Examiner Satyendra K. Singh	Art Unit 1657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-8 and 16-21 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-8 and 16-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's response and amendments to the claims filed with the office on January 8th 2007 is duly acknowledged.

Claims 3 and 4 (groups II-III) remain withdrawn from further consideration.

Claims 9-15 (group IV) have been cancelled by applicant's current amendments to the claims.

Claims 1, 2, 5-8 (elected invention of group I) and newly added product-by-process claims 16-21 are examined on their merits, herein.

This action contains **new grounds of rejections** necessitated by applicant's amendments to the claims.

Claims

Claim 16 (newly added) has following informalities: The claimed limitation "or **salt** thereof" is misspelled as "or **sat** thereof", as recited in line 15 of the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 16 (newly added) is rejected under 35 U.S.C. 112, second paragraph, as being **indefinite** for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 16 (a product-by-process claim) recites the limitation of a method steps 4a (page 5, lines 9-11; and also see method step 1b) "treating the stretched or wet spun fiber with a base, di- or more-basic inorganic acid or

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salt thereof, tri- or more-basic organic acid or salt thereof", which is confusing. It is unclear as to what exactly the method step encompasses, the treating individually with a base, or an inorganic acid or salt thereof, or an organic acid or salt thereof, or treating with all the agents as recited in the claim. The recitation does not distinctly present (in the alternative) the agent used for the treatment step as set forth in the instant claim. Similarly, the recitation of the method step 1b (lines 13-16, page 5) is unclear for the same reasons as discussed above. Appropriate explanation/correction is required.

Additionally, claim 16 recites (in line 15 on page 5) the limitation of "di- or more organic **basic acid** or sat (salt) thereof", which is also confusing. It is not clear as to what exactly is meant and encompassed by the limitation (basic acid) as presented by the applicants in the instant method step 1b. Appropriate explanation/correction is required.

Since, claims 17-21 depend (directly or indirectly) from the broader claim 16, they are also rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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1. Claims 1, 5-8, 16, and 18-21 remain/are rejected under 35 U.S.C. 102(b) as being anticipated by Amaike et al [U].

Claims are generally directed to a **fiber** composition comprising **chitosan** as the inner part of the fiber, which is **covered** by a biodegradable **acidic biopolymer** (that can form complex with the chitosan polymer, and that the resulting fiber **retains the shape** thereof when soaked in DMEM medium at room temperature for 2 weeks); and wherein the fibers of claim 1 are used in the form of **three dimensional scaffolds** (presumably suitable) for **animal cells** (i.e. as a substrate for animal cell adhesion and animal cell culture, or *in vivo* applications; intended use limitation).

Newly added claims 16 and 18-21 (taken as **product-by-process** claims) are generally directed to a fiber composition (as a product of the method steps as specifically recited in instant claim 16), and its intended use as a three dimensional scaffold for animal cells as specifically recited in instant claims 18-21.

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

Amaike et al [U] teach a fiber composition comprising chitosan as the inner part of the fiber, which is covered by a biodegradable acidic biopolymer (gellan gum, a acidic biodegradable polymeric material, which is composed of glucose, rhamnose and glucuronic acid that can form polyionic complex with the chitosan polymer; see Amaike et al, introduction, and materials & methods, in particular; also see applicant's definition of the term "**acidic biopolymer**" on page 12, last paragraph of the instant disclosure, which encompasses a polymer derived from natural source having acidic groups or **salt thereof**), and can retain the shape thereof (see page 288, left column, in particular), and that can be used as a three dimensional scaffold for *in vivo* biological applications (see Amaike et al, page 289, left column, in particular). Since, the fibers as taught by the invention of Amaike et al can themselves act as a three dimensional scaffold (suitable *for in vivo* use), the invention as claimed is fully anticipated by Amaike et al.

The limitations of the process steps (as specifically recited in instant claim 16 such as wet spinning in the presence of a coagulant, and immersing the spun fiber in a solution of acidic biopolymer, and treating said fiber with a base or salt thereof; see instant claim 16 for detailed recitations of the method steps required to produce said fibers) recited in newly added claim 16 do not impart any structural difference in the final product obtained (i.e. the fiber having a inner core made of chitosan and covered with a complex of chitosan and an acidic biopolymer) by the instant invention over the product disclosed by the prior art reference as discussed above. Moreover, Amaike et al explicitly disclose that the suitable methods "capable of producing fiber are dry- or wet spinning" (see page 288, left column, last paragraph, in particular). Therefore, the limitations of product-by-process claim 16 are fully met by the invention of Amaike et al.

It is noted that the cited prior art (Amaike et al, [U]) does not explicitly teach that their composition (i.e. the hybrid fibers) can be used in the manner such as claimed in the instant claims 5-8 (and newly added claims 18-21). However, the intended use of the claimed composition does not patentably distinguish the composition, per se, since such undisclosed use is inherent in the referenced composition of Amaike et al (see discussion, supra). In order to be limiting, the intended use must create a structural difference between the claimed composition and the composition of the prior art. In the instant case, the intended use fails to create a structural difference, thus, the intended use is not limiting. Please note that when applicant claims a composition in terms of function, and the composition of the prior art appears to be the same, the examiner may make rejections under both 35 U.S.C. 102 and 103(MPEP 2112).

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2. Claims 1, 2, 5-8 and 16-21 remain/are rejected under 35 U.S.C. 102(b) as being anticipated by Tadashi et al (EP 0544,259 A1; IDS).

Claims are generally directed to a **fiber** composition comprising **chitosan** as the inner part of the fiber, which is **covered** by a biodegradable **acidic biopolymer** (such as hyaluronic acid, or alginic acid, etc. as specifically recited in claim 2; that can form complex with the chitosan polymer, and that the resulting fiber **retains the shape** thereof when soaked in DMEM medium at room temperature for 2 weeks); and wherein the fibers of claim 1 are used in the form of **three dimensional scaffolds** (presumably suitable) for **animal cells** (i.e. as a substrate for animal cell adhesion and animal cell culture or *in vivo* applications; intended use limitation).

Newly added claims 16-21 (taken as **product-by-process** claims) are generally directed to a fiber composition (as a product of the method steps as specifically recited in instant claim 16), which is covered by a biodegradable acidic biopolymer (such as hyaluronic acid, or alginic acid, etc. as specifically recited in claim 2 that can form complex with the chitosan polymer), and its intended use as a three dimensional scaffold for animal cells as specifically recited in instant claims 18-21.

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

Tadashi et al (IDS) teach a fiber composition (see abstract; page 2, last paragraph; page 3, lines 39-45; page 7, lines 44-49; examples 10-11; and claims 11-12 and 18-19, in particular) comprising **chitosan** as the inner part of the fiber, which is covered by a biodegradable acidic biopolymer (such as **hyaluronic acid**; that can form complex with the chitosan polymer, and that the resulting fiber retains the shape thereof when soaked in water for a month; see example 11 and 12, in particular); and wherein the fibers and sheet (or any suitable shape or scaffold structure; see pages 6-7, in particular) made of polyion complex are suitable for use in the form of three dimensional scaffolds for *in vivo* applications; see abstract, and page 8, first paragraph, in particular).

The limitations of the process steps (as specifically recited in instant claim 16 such as wet spinning in the presence of a coagulant, and immersing the spun fiber in a

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solution of acidic biopolymer, and treating said fiber with a base or salt thereof; see instant claim 16 for detailed recitations of the method steps required to produce said fibers) recited in newly added claim 16 do not impart any structural difference in the final product obtained (i.e. the fiber having a inner core made of chitosan and covered with a complex of chitosan and an acidic biopolymer) by the instant invention over the product disclosed by the prior art reference as discussed above. Moreover, Tadashi et al explicitly disclose the process of making fibers using wet spinning (albeit using a mixture of chitosan and hyaluronic acid solutions to form polyion complex fibers; see page 7, lines 44-49, and claim 12, in particular). Therefore, the limitations of product-by-process claim 16 are fully met by the invention of Tadashi et al.

With regards to the claimed limitations of instant claims 5-8 and newly added claims 18-21, as discussed supra, the intended use of the claimed composition does not patentably distinguish the composition, per se, since such undisclosed use is inherent in the referenced composition of Tadashi et al (see discussion, supra). In order to be limiting, the intended use must create a structural difference between the claimed composition and the composition of the prior art. In the instant case, the intended use fails to create a structural difference, thus, the intended use is not limiting. Please note that when applicant claims a composition in terms of function, and the composition of the prior art appears to be the same, the examiner may make rejections under both 35 U.S.C. 102 and 103(MPEP 2112).

As per MPEP 2111.01, during examination, the claims must be interpreted as broadly as their terms reasonably allow. In re American Academy of Science Tech Center, F.3d, 2004 WL 1067528 (Fed. Cir. May 13, 2004)(The USPTO uses a different standard for construing claims than that used by district courts; during examination the USPTO must give claims their broadest reasonable interpretation.). This means that the words of the claim must be given their plain meaning unless applicant has provided a

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clear definition in the specification. *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 5-8 and 16-21 remain/are rejected under 35 U.S.C. 103(a) as being unpatentable over Amaike et al [U] in view of Tadashi et al (EP 0,544 259 A1; IDS).

Claims (as currently amended) are generally directed to a **fiber composition** comprising **chitosan** as the inner part of the fiber, which is covered by a biodegradable acidic biopolymer (such as **hyaluronic acid**, or alginic acid, etc. as specifically recited in **claim 2**; that can form complex with the chitosan polymer, and that the resulting fiber retains the shape thereof when soaked in DMEM medium at room temperature for 2 weeks; see specific recitations of claim 1, and newly added **product-by-process** claim 16).

The teachings of Amaike et al [U] have been discussed above and are further relied upon in the same manner, herein. Amaike et al teach stable and strong fibers comprising chitosan and an acidic biopolymer (such as gellan gum), wherein the inner part of the fiber is made from chitosan and is coated/covered with the acidic biopolymer

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on the outside using the polysaccharide/polyion complex formation, that retain the shape thereof (see discussion, *supra*).

However, a fiber (as recited in claim 1 and newly added claim 16) made from chitosan and acidic biopolymer, wherein the acidic biopolymer is selected from the group consisting of **hyaluronic acid**, alginic acid....(see instant claim 2 for specific recitation), is not explicitly taught by the referenced invention of Amaike et al.

The teachings of Tadashi et al (EP 0544,259 A1; IDS) have been described above, and are relied upon in the same manner, herein. As discussed, *supra*, Tadashi et al teach a fiber composition (see abstract; page 2, last paragraph; page 3, lines 39-45; page 7, lines 44-49; examples 10-11; and claims 11-12 and 18-19, in particular) comprising chitosan as the inner part of the fiber, which is covered/coated by a biodegradable acidic biopolymer (such as hyaluronic acid; that can form complex with the chitosan polymer, and that the resulting fiber retains the shape thereof when soaked in water for a month; see example 10, in particular); and wherein the fibers and sheet (or any suitable shape or scaffold structure; see pages 6-7, in particular) made of polyion complex are suitable for use in the form of three dimensional scaffolds for *in vivo* applications; see abstract, and page 8, first paragraph, in particular).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time this invention was made to substitute a functionally analogous acidic biopolymer (such as, a gellan gum) in the invention (i.e. the fiber composition) of Amaike et al with another acidic biopolymer (such as, hyaluronic acid) as explicitly taught by the invention of Tadashi et al (IDS).

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One of ordinary skill in the art would have been motivated at the time of invention to make the substitution in the acidic biopolymer (i.e. to use hyaluronic acid in place of gellan gum as an outer covering/coating) in order to obtain excellent biocompatible fibers that have superior stability and tensile strength (see Tadashi et al, page 2, lines 25-27, in particular) as suggested by the references with a reasonable expectation of success. The claimed subject matter fails to patentably distinguish over the state of the art as represented by the cited references. Therefore, the claims are properly rejected under 35 U.S.C. § 103.

Thus, the invention as a whole would have been *prima facie* obvious to a person of ordinary skill in the art at the time the claimed invention was made.

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

As per MPEP 2144.06, In order to rely on equivalence as a rationale supporting an obviousness rejection, the equivalency must be recognized in the prior art, and cannot be based on applicant's disclosure or the mere fact that the components at issue are functional or mechanical equivalents. In re Ruff, 256 F.2d 590, 118 USPQ 340 (CCPA 1958).

As per MPEP, "The selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945)" (see MPEP 2144.07).

As per MPEP 2111.01, during examination, the claims must be interpreted as broadly as their terms reasonably allow. In re American Academy of Science Tech Center, F.3d, 2004 WL 1067528 (Fed. Cir. May 13, 2004)(The USPTO uses a different standard for construing claims than that used by district courts; during examination the USPTO must give claims their broadest reasonable interpretation.). This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

Pertinent prior art not relied upon in the rejections

1. Ohkawa et al. "Self-assembling capsule and fiber formation of polyion complexes of chitosan and poly (α , L-glutamic acid)", *Macromolecular Rapid Communications*, 2000, 21(5): 223-225, especially pages 223-224, and references therein.
2. Vacanti et al. "Guided development and support of hydrogel-cell compositions", US Patent 6,027,744, especially abstract and summary of the invention.
3. Martin et al. "Implantable fibers and medical articles", US Patent 6,162,537, especially abstract, and summary of the invention, and claims.
4. Denuziere et al. "Chitosan-chondroitin sulfate and chitosan-hyaluronate polyelectrolyte complexes: biological properties", *Biomaterials*, 1998, 19: 1275-1285, especially abstract, introduction, in particular.

Response to Arguments

Applicant's arguments filed with the office on January 8th 2007 (as they pertain to the prior art rejections of record) have been fully considered but they are not persuasive.

Claims (as currently amended) are generally directed to a **fiber composition** comprising **chitosan** as the inner part of the fiber, which is covered by a biodegradable acidic biopolymer (such as **hyaluronic acid**, or alginic acid, etc. as specifically recited in **claim 2**; that can form complex with the chitosan polymer, and that the resulting fiber retains the shape thereof when soaked in DMEM medium at room temperature for 2 weeks; see specific recitations of claim 1, and newly added **product-by-process** claim 16).

Applicant's arguments regarding the prior art rejection under 102(b) over teachings of Amaike et al (see remarks, page 10, first paragraph, and attachments B and C submitted by applicants, in particular) that gellan gum is not an "acidic biopolymer" and therefore, the prior art reference does not anticipate the product (i.e. chitosan/acidic biopolymer fiber) as claimed, is fully considered but was not found to be persuasive because (as discussed explicitly in the previous office action) Amaike et al explicitly disclose the composition of the functional groups (see page 287, introduction, 2nd paragraph, in particular) present in gellan gum that comprises of repeating units comprising 1,4-beta-D-**glucuronic acid**, and that can be present as a **salt thereof** (as explicitly defined by applicants in the instant disclosure (see the definition of the term

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“acidic biopolymers” in instant specification, page 12, last paragraph, in particular) as encompassing “polymers derived from natural source having acidic groups such as **carboxyl group**,, or **salt thereof**”.

Applicants further seem to argue (see remarks, pages 10-12) that the process steps used in the preparation of the fiber product in the instant invention are quite different than the prior art (see remarks, page 10, 2nd paragraph, and page 11, last paragraph, in particular), and thus the product obtained is superior and patentably distinct over the prior art. This is not found to be persuasive because the structural features of the product **as recited in the instant claims** (claim 1, and newly added product-by-process claim 16) are fully met by the product of the prior art (i.e. a fiber with inner chitosan core covered with a complex of chitosan and an acidic biopolymer).

The rejection under 35 USC 102(b) of the pending claims over the prior art Tadashi et al is also maintained because, as discussed above, the structural features of the chitosan/acidic biopolymer fiber (as recited in the claim 1, and newly added product-by-process claim 16) is fully met by the product disclosed in the prior art reference (see the 35 USC 102 (b) rejection, above; and Tadashi et al, claims, in particular), and since, the process limitations do not impart any patentably distinct structural feature (that are recited in the instant claims), the rejection of record is properly maintained.

Applicants remarks with respect to the obviousness rejection under 35 USC 103(a) made by examiner in the previous office action (on pending claims 1, 2, and 5-8; see applicant's remarks, page 14, footnote 1, in particular) that “the rejection (referring to the obviousness rejection of record) is clearly and certainly inconsistent with the two

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anticipation rejections" is not found to be persuasive because the obviousness rejection of record emphasizes the very fact that one of ordinary skill in the art would have known (at the time this invention was made) and would have had a reasonable expectation of success when using or substituting a functional equivalent for various acidic biopolymers (as recited by applicants in the instant claim 2, and newly added claim 17) as recited for use in the instant invention.

However, applicant's argument that the teachings of the two prior art references relied upon in the obviousness rejection of record (Amaike et al and Tadashi et al) cannot be combined to achieve the resulting product as claimed (see remarks, page 15, in particular) is not found to be persuasive because they explicitly disclose the product as claimed in the instant invention, and since the process steps as recited in the newly added claim 16 do not impart a structural feature that is patentably distinct over the prior art product, the rejection of record is properly maintained.

Conclusion

NO claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not


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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satyendra K. Singh whose telephone number is 571-272-8790. The examiner can normally be reached on 9-5MF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon P. Weber can be reached on 571-272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Satyendra K. Singh
Patent Examiner
Art Unit 1657



SANDRA E. SAUCIER
PRIMARY EXAMINER